

**National Transportation Safety Board
Washington, DC 20594**

Brief of Accident

Adopted 03/02/2004

NYC02LA155 File No. 14979		08/06/2002	Coatesville, PA	Aircraft Reg No. N31SW	Time (Local): 10:35 EDT		
Make/Model: Piper / PA-28-235				Crew Pass	Fatal	Serious	Minor/None
Engine Make/Model: Lycoming / O-540-B4					0	1	0
Aircraft Damage: Substantial					0	0	0
Number of Engines: 1							
Operating Certificate(s): None							
Type of Flight Operation: Personal							
Reg. Flight Conducted Under: Part 91: General Aviation							
Last Depart. Point: Delaware, OH					Condition of Light: Day		
Destination: Same as Accident/Incident Location					Weather Info Src: Weather Observation Facility		
Airport Proximity: Off Airport/Airstrip					Basic Weather: Visual Conditions		
					Lowest Ceiling: None		
					Visibility: 10.00 SM		
					Wind Dir/Speed: 350 / 015 Kts		
					Temperature (°C): 23		
					Precip/Obscuration: None / None		
Pilot-in-Command		Age: 45	Flight Time (Hours)				
Certificate(s)/Rating(s)		Total All Aircraft: 6418					
Flight Instructor; Commercial; Multi-engine Land; Single-engine Land		Last 90 Days: 366					
Instrument Ratings		Total Make/Model: 94					
Airplane		Total Instrument Time: UnK/Nr					

According to the pilot, he flight planned the cross-country flight using a "more conservative" fuel burn rate of 15 gallons per hour. The flight departed with full fuel tanks. During the 4.8-hour flight, the pilot diverted to a different airport due to weather, and remained overnight. The airplane was not refueled during the layover, and departed the next day. Approaching the destination airport, the engine lost all power. The pilot attempted to enter the traffic pattern, and while on the downwind leg, realizing that he would not be able to land on a runway, the pilot performed a forced landing to a wooded area. After the accident, the pilot stated to the airplane's owner that he was concerned about running out of fuel, and that the engine had quit on downwind. Examination of the wreckage revealed that both wing fuel tanks were ruptured, and no fuel was observed in either the fuel tanks or lines. According to the airplane's Information Manual, the total fuel capacity of the airplane was 84 gallons, 82 of which were usable. Review of a Lycoming O-540-B series engine operator's manual revealed that the fuel burn, at a power setting of 70 percent, at a pressure altitude of 6,000 feet, and a full rich mixture setting, was about 15 gallons per hour.

Brief of Accident (Continued)

NYC02LA155				
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Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: APPROACH

Findings

1. FLUID,FUEL - EXHAUSTION
2. (C) IN-FLIGHT PLANNING/DECISION - IMPROPER - PILOT IN COMMAND
3. (C) FUEL CONSUMPTION CALCULATIONS - INACCURATE - PILOT IN COMMAND

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: DESCENT - EMERGENCY

Findings

4. OBJECT - TREE(S)

Findings Legend: (C) = Cause, (F) = Factor

The National Transportation Safety Board determines the probable cause(s) of this accident as follows.
The pilot's inaccurate in-flight planning and fuel consumption calculations, and his improper decision to not land and refuel which led to fuel exhaustion and subsequent loss of engine power.